## IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method for detecting ~~assaying for~~ an antibody ~~immunological~~ response in a mammal comprising:

(a) administering to the mammal a chemical probe for an antibody-generated reactive oxygen species;

(b) obtaining a sample from the mammal; and

(c) analyzing the sample for an oxidized chemical probe to ~~thereby~~ detect whether there is an antibody ~~the immunological~~ response in the mammal; wherein the reactive oxygen species comprise oxygen with one or more unpaired electrons.

2. (Previously Presented) The method of claim 1, wherein the chemical probe is an alkene that can be oxidized during an immunological response in the mammal.

3. (Original) The method of claim 1, wherein the chemical probe is 3-vinyl-benzoic acid, 4-vinyl-benzoic acid, indigo carmine, stilbene, or cholesterol.

4. (Cancelled)

5. (Original) The method of claim 1, wherein the reactive oxygen species is a superoxide radical, hydroxyl radical, peroxyl radical or hydrogen peroxide.

6. (Previously Presented) The method of claim 1, wherein the reactive oxygen species is ozone.

7. (Original) The method of claim 1, wherein the sample is a bodily fluid.

8. (Original) The method of claim 7, wherein the bodily fluid is whole blood, serum, plasma, synovial fluid, lymph, urine, saliva, mucus or tears.

9. (Original) The method of claim 1, wherein the sample is a tissue sample.

10. (Previously Presented) The method of claim 1, wherein the oxidation product of the chemical probe is detected by high pressure liquid chromatography, mass spectrometry, ultraviolet light spectrophotometry, visible light spectrophotometry, liquid chromatography, gas chromatography, or liquid chromatography linked mass spectrometry.

11. (Currently Amended) A method for detecting ~~assaying for~~ an antibody-generated inflammatory response in a mammal comprising:

(a) administering to the mammal a chemical probe for an antibody-generated reactive oxygen species;

(b) obtaining a sample from the mammal; and

(c) analyzing the sample for an oxidized chemical probe to ~~thereby~~ detect whether there is an antibody-generated ~~the~~ inflammatory response in the mammal; wherein the reactive oxygen species comprise oxygen with one or more unpaired electrons.

12. (Previously Presented) The method of claim 11, wherein the chemical probe is an alkene that can be oxidized.

13. (Original) The method of claim 11, wherein the chemical probe is 3-vinyl-benzoic acid, 4-vinyl-benzoic acid, indigo carmine, stilbene, or cholesterol.

14. (Cancelled)

15. (Original) The method of claim 11, wherein the reactive oxygen species is a superoxide radical, hydroxyl radical, peroxyl radical or hydrogen peroxide.

16. (Previously Presented) The method of claim 11, wherein the reactive oxygen species is ozone.

17. (Original) The method of claim 11, wherein the sample is a bodily fluid.

18. (Original) The method of claim 17, wherein the bodily fluid is whole blood, serum, plasma, synovial fluid, lymph, urine, saliva, mucus or tears.

19. (Original) The method of claim 11, wherein the sample is a tissue sample.

20. (Previously Presented) The method of claim 11, wherein the oxidation product of the chemical probe is detected by high pressure liquid chromatography, mass spectrometry, ultraviolet light spectrophotometry, visible light spectrophotometry, liquid chromatography, gas chromatography, or liquid chromatography linked mass spectrometry.

21. (Withdrawn) An in vitro assay for neutrophil activity comprising:
(a) obtaining a neutrophil sample from a mammal;
(b) activating neutrophils in the neutrophil sample; and
(c) observing whether a reactive oxygen species can be detected in the neutrophil sample.

22. (Withdrawn) The method of claim 21, wherein the reactive oxygen species is a neutrophil-generated oxygen species.

23. (Withdrawn) The method of claim 21, wherein the reactive oxygen species is an antibody-generated oxygen species.

24. (Withdrawn) The method of claim 21, wherein the reactive oxygen species is a superoxide radical, hydroxyl radical, peroxyl radical or hydrogen peroxide.

25. (Withdrawn) The method of claim 21, wherein the reactive oxygen species is ozone or a chemical species that possesses the chemical signature of ozone.

26. (Withdrawn) The method of claim 21, wherein the reactive oxygen species is detected with a chemical probe.

27. (Withdrawn) The method of claim 26, wherein the chemical probe is an alkene that can be oxidized and that generates a detectable oxidation product.

28. (Withdrawn) The method of claim 26, wherein the chemical probe is 3-vinyl-benzoic acid, 4-vinyl-benzoic acid, indigo carmine, stilbene, or cholesterol.

29. (Withdrawn) The method of claim 27, wherein an oxidation product of the chemical probe is detected in order to determine whether a reactive oxygen species is present in the neutrophil sample.

30. (Withdrawn) The method of claim 29, wherein the oxidation product is detected by high pressure liquid chromatography, mass spectrometry, ultraviolet light spectrophotometry, visible light spectrophotometry, liquid chromatography, gas spectrometry, or liquid chromatography linked mass spectrometry.

31. (Withdrawn) A method for identifying an agent that can modulate neutrophil activity comprising:

(a) obtaining a neutrophil sample from a mammal;

(b) exposing the neutrophil sample to a test agent;

(c) activating neutrophils in the neutrophil sample; and

(d) quantifying an amount of reactive oxygen species generated by the neutrophil sample.

32. (Withdrawn) The method of claim 31, wherein the method further comprises quantifying an amount of reactive oxygen species generated by a neutrophil sample that has not been exposed to the test agent but is from the same mammal.

33. (Withdrawn) The method of claim 31, wherein the neutrophil sample is a bodily fluid.

34. (Withdrawn) The method of claim 33, wherein the bodily fluid is whole blood, synovial fluid or lymph.

35. (Withdrawn) The method of claim 31, wherein the neutrophil sample is a tissue sample.

36. (Withdrawn) The method of claim 31, wherein the reactive oxygen species is a neutrophil-generated oxygen species.

37. (Withdrawn) The method of claim 31, wherein the reactive oxygen species is an antibody-generated oxygen species.

38. (Withdrawn) The method of claim 31, wherein the reactive oxygen species is a superoxide radical, hydroxyl radical, peroxyl radical or hydrogen peroxide.

39. (Withdrawn) The method of claim 31, wherein the reactive oxygen species is ozone or a chemical species that possesses the chemical signature of ozone.

40. (Withdrawn) The method of claim 31, wherein the amount of reactive oxygen species is quantified with a chemical probe.

41. (Withdrawn) The method of claim 40, wherein the chemical probe is an alkene that can be oxidized and that generates a detectable oxidation product.

42. (Withdrawn) The method of claim 40, wherein the chemical probe is 3-vinyl-benzoic acid, 4-vinyl-benzoic acid, indigo carmine, stilbene, or cholesterol.

43. (Withdrawn) The method of claim 40, wherein an oxidation product of the chemical probe is quantified.

44. (Withdrawn) The method of claim 43, wherein the oxidation product is quantified by high pressure liquid chromatography, mass spectrometry, ultraviolet light spectrophotometry, visible light spectrophotometry, liquid chromatography, gas spectrometry, or liquid chromatography linked mass spectrometry.